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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,927	11/14/2003	Yuka Yamada	YAMADA =45A	7435

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EXAMINER	
HODGES, MATTHEW P	
ART UNIT	**PAPER NUMBER**
2879	

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/706,927	YAMADA ET AL.	
	Examin r	Art Unit	
	Matt P Hodges	2879	

-- Th MAILING DATE of this communication appears on the cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/14/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 and 9-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsukamoto. (US 5,986,389)

Regarding claim 1, Tsukamoto discloses (see figure 3) an electron emissive element including a cold cathode having a crystalline thin film (6) consisting of an electron emissive material. (Column 9 lines 39-43).

The claim recitation of the emissive element being "formed by means of a cold cathode forming process comprising a step for providing a target material and a substrate in a reaction chamber, a step for controlling the pressure (P) of the ambient gas introduced into the reaction chamber and the distance (D) between the substrate and the target material so that the size of a high temperature high pressure area formed near the target material by irradiating a beam light onto the target material is optimal, and a step for exciting and ejecting the material contained in the target material by irradiating the beam light onto the target material with introducing the ambient gas into the reaction chamber at the pressure to deposit the material on the substrate" is considered a method (i.e. a process) of making an electron emissive element and thus is considered a "product-by-process" recitation. In spite of the fact that a product-by-process recitation may recite only process limitations, it is the product and not the recited process that is

covered by the claim. Further, patentability of a claim to a product does not rest merely on the difference in the method by which the product is made. Rather it is the product itself which must be new and not obvious. As such, no patentable weight has been given to the process recited.

Regarding claim 2, Tsukamoto discloses (see figure 3) the device as claimed (see rejection of claim 1 above) and further discloses the use of a conductive film (4) between the emissive element and the substrate.

The process limitations have not been given patentable weight for the same reasons as cited in the rejection of claim 1 above.

Regarding claims 3-6, Tsukmoto further discloses the use of either TiC or TiN in the crystalline fine particle film. (Column 7 lines 9-15) and (Column 8 lines 5-18).

Regarding claims 9 and 10, Tsukmoto further discloses the use of the electron emissive elements (see rejection of claims 1 and 2 above) in a flat panel display. (See figure 9)

Regarding claims 11 and 12, Tsukmoto discloses the device as claimed (see rejections of claims 1 and 2 above) and further discloses (see figure 3) the use of a glass substrate (1) to which the electron emissive element is disposed. (Column 6 lines 19-25).

Regarding claims 13 and 14, Tsukmoto further discloses the use of In_2O_3 in the crystalline fine particle film. (Column 7 lines 9-15) and (Column 8 lines 5-18).

Regarding claims 15 and 16, Tsukmoto discloses the device as claimed (see rejections of claims 9-12 above).

Claims 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al. (US 5,391,956)

Regarding claim 1, Watanabe discloses (see figure 3) an electron emissive element including a cold cathode having a crystalline thin film (304) consisting of an electron emissive material. The crystalline thin film is formed over a conductive layer with is formed over the substrate. (Column 10 lines 27-42). Further the electron emissive element is used as the source in a CRT device. (Column 10 lines 52-57).

The claim recitation of the emissive element being "formed by means of a cold cathode forming process comprising a step for providing a target material and a substrate in a reaction chamber, a step for controlling the pressure (P) of the ambient gas introduced into the reaction chamber and the distance (D) between the substrate and the target material so that the size of a high temperature high pressure area formed near the target material by irradiating a beam light onto the target material is optimal, and a step for exciting and ejecting the material contained in the target material by irradiating the beam light onto the target material with introducing the ambient gas into the reaction chamber at the pressure to deposit the material on the substrate" is considered a method (i.e. a process) of making an electron emissive element and thus is considered a "product-by-process" recitation. In spite of the fact that a product-by-process recitation may recite only process limitations, it is the product and not the recited process that is covered by the claim. Further, patentability of a claim to a product does not rest merely on the difference in the method by which the product is made. Rather it is the product itself which must be new and not obvious. As such, no patentable weight has been given to the process recited.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nakamoto et al. (US 6,417,606) discloses the use of emitter tips including TiC and TiN.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt P Hodges whose telephone number is (571) 272-2454. The examiner can normally be reached on 7:30 AM to 4:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

mph

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SUPERVISORY PATENT EXAMINER
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